SINTEF Technical Approval

TG 20844

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www.sintefcertification.no

SINTEF confirms that

Unilin Utherm PIR insulation boards

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

1. Holder of the approval

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2. Product description

Unilin Utherm are insulation boards made of rigid polyisocyanurate (PIR), see Fig. 1. For use on flat and low sloped roofs.

Utherm Roof B (Fig. 1a) is finished on both sides with a diffusion open bituminized glassfleece and straight edges. It is available in thicknesses 30-200 mm. Utherm Roof B also comes as tapered, thicknesses and gradients are shown in Table 2.

Utherm Roof L (Fig. 1b) is finished on both sides with a multilayer diffusion tight laminate facer and straight edges Utherm Roof L can be delivered with tongue and groove edges. It is available in thicknesses 20 -200 mm Utherm Roof L also comes as tapered, thicknesses and gradients are shown in Table 2.

Utherm Roof LE (Fig. 1c) is finished on both sides with a multilayer diffusion tight laminate facer and straight edges. It is available in thicknesses 20 -200 mm Utherm Roof LE also comes as tapered, thicknesses and gradients are shown in Table 2.

Utherm Roof LE Pro (Fig. 1d) is finished on both sides with a multilayer diffusion tight laminate facer and straight edges. It is available in thicknesses 30 -200 mm Utherm Roof LE PRO also comes as tapered, thicknesses and gradients are shown in Table 2.

The boards are normally supplied with dimensions shown in Table 1.

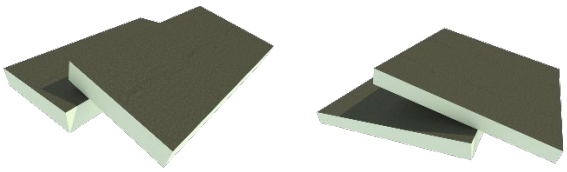

Fig. 1a
Polyisocyanurate (PIR) insulation boards. Utherm Roof B and Utherm roof B tapered
Figure: Unilin bvba

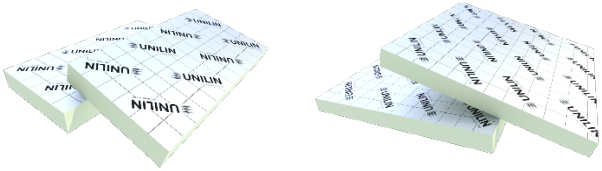

Fig. 1b
Polyisocyanurate (PIR) insulation boards. Utherm Roof L and Utherm roof L tapered
Figure: Unilin bvba

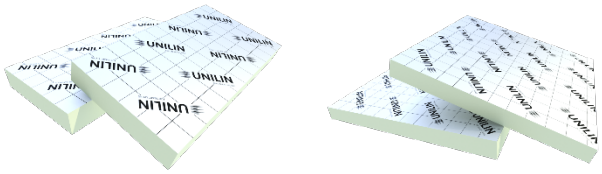

Fig. 1c
Polyisocyanurate (PIR) insulation boards. Utherm Roof LE and Utherm Roof LE Tapered
Figure: Unilin bvba

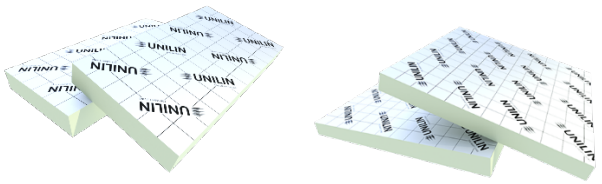

Fig. 1d
Polyisocyanurate (PIR) insulation boards Utherm Roof LE Pro and Utherm Roof LE Pro Tapered
Figure: Unilin bvba

Table 1
Dimensions and tolerances of Unilin Utherm Roof insulation boards

Property	Test method	Value	Tolerance	Unit
Length				
- Utherm Roof B	EN 822	1200	± 7,5	mm
- Utherm Roof L		1200/2400	± 7,5/± 10	
- Utherm Roof LE		1200/2400	± 7,5/± 10	
- Utherm Roof LE Pro		1200/2400	± 7,5/± 10	
Width				
- Utherm Roof B	EN 822	600	± 5	mm
- Utherm Roof L		600/1200	± 5/± 7,5	
- Utherm Roof LE		600/1200	± 5/± 7,5	
- Utherm Roof LE Pro		600/1200	± 5/± 7,5	
Thickness			Class T2 acc. EN 13165	
- Utherm Roof B	EN 823	30-200	< 50 / ± 2	mm
- Utherm Roof L		20-180/30-160	50-70 / ± 3	
- Utherm Roof LE		20-200/20-200	>75 / +5,-3	
- Utherm Roof LE Pro		30-200		
Squareness	EN 824	≤ 5		mm/m
Flatness	EN 825	≤ 0,75 m²	≤ 5	mm
		> 0,75 m²	≤ 10	
Density	-	32	± 3	kg/m³

Table 2
Dimensions and tolerances of Utherm Roof tapered insulation boards

Property	Incline mm	Thickness Min-max mm	Gradient
Utherm Roof B Tapered	10	30-100	1:120
	20	30-110	1:60
	30	30-90	1:40
Utherm Roof L Tapered	10	30-120	1:120
	15	30-120	1:80
	20	30-130	1:60
	25	30-130	1:48
Utherm Roof LE Tapered Utherm roof LE PRO Tapered	10	30-120	1:120
	15	30-120	1:80
	20	30-130	1:60
	25	30-130	1:48
	30	30-120	1:40

[1)] All boards have 1200x1200 mm as standard dimensions

Table 3
Product properties of Unilin Utherm Roof insulation boards for flat roofs

Property	Test method	Class / level EN 13165		Unit
		Declaration of performance[1)]	Control limit[2)]	
Compressive strength				
- Utherm Roof B - Utherm Roof B Tapered - Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered	EN 826	CS (10/Y)150	CS (10/Y)150	
- Utherm Roof L - Utherm Roof L Tapered		CS (10/Y)150: d_N<60 mm CS (10/Y)175 d_N 60-89 mm CS (10/Y)200 d_N ≥90 mm	CS (10/Y)150: d_N<60 mm CS (10/Y)175 d_N 60-89 mm CS (10/Y)200 d_N ≥90 mm	
Dimensional stability at specified temperature and humidity				
- Utherm Roof B - Utherm Roof B Tapered - Utherm Roof L - Utherm Roof L Tapered - Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered	EN 1604	DS(70,90)3 DS(-20,-)1	DS(70,90)3 DS(-20,-)1	
Deformation under specified load and temperature conditions				
Utherm Roof B - Utherm Roof B Tapered - Utherm Roof L - Utherm Roof L Tapered - Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered	EN 1605	DLT(2)5	DLT(2)5	
Tensile strength				
- Utherm Roof B - Utherm Roof B Tapered	EN 1607	TR 80	TR 80	
- Utherm Roof L		TR100: d_N ≤ 160 mm TR80: d_N >160 mm	TR100: d_N ≤ 160 mm TR80: d_N >160 mm	
- Utherm Roof L Tapered		TR 100	TR 100	

Property	Test method	Class / level EN 13165		Unit
		Declaration of performance[1)]	Control limit[2)]	
Tensile strength				
- Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered		TR 80	TR 80	
Thermal conductivity λ_D				W/(mK)
- Utherm Roof B - Utherm Roof B Tapered	EN 12667	0,027 (d_N<80mm) 0,026 (80mm≥dN< 120mm 0,024≥120mm	0,027 (d_N<80mm) 0,026 (80mm≥dN< 120mm 0,024≥120mm	
- Utherm Roof L - Utherm Roof L Tapered - Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered		0,022	0,022	
Thermal resistance R_D				m^2K/W
- Utherm Roof B	EN 12667	1,10 d_N 30 mm 8,30 d_N 200mm	1,10 d_N 30 mm 8,30 d_N 200mm	
- Utherm Roof B Tapered		1,10 d_N 30 mm 5,80 d_N 140mm	1,10 d_N 30 mm 5,80 d_N 140mm	
- Utherm Roof L - Utherm Roof L Tapered		0,90 d_N 20 mm 7,25 d_N 160mm	0,90 d_N 20 mm 7,25 d_N 160mm	
- Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered		0,90 d_N 20 mm 9,05 d_N 200mm	0,90 d_N 20 mm 9,05 d_N 200mm	
Water absorption				
- Utherm Roof B - Utherm Roof B Tapered - Utherm Roof L - Utherm Roof L Tapered - Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE Pro Tapered	EN 12087 (	WL(T)2	WL(T)2	
Reaction to fire				
- Utherm Roof B - Utherm Roof B Tapered - Utherm Roof L - Utherm Roof L Tapered	EN 13501-1	F	F	-
- Utherm Roof LE - Utherm Roof LE Tapered - Utherm Roof LE Pro - Utherm Roof LE ProTapered		E	E	

[1)] Manufacturers Declaration of Performance, DoP

[2)] Control limit show values product has to satisfy during internal factory production control and audit testing.

3. Fields of application

Unilin Utherm insulation boards are intended for use as thermal insulation in compact roofs with and without pedestrian traffic and/or terraces. An overview of applications for the individual board types of Unilin Utherm insulation boards is shown in Table 4.

Unilin Utherm insulation boards can be used as insulation in compact roofs and terraces in buildings in risk class 1-6 in fire classes 1, 2 and 3 in accordance with the technical requirements for building works (TEK17)) with guidance document. The constructions must be performed and used as shown in Fig. 2-12, and in accordance with the assumptions and principles given in section 6 Terms of use.

Table 4
Applications for the individual board types

Product name	Area of application
Utherm Roof B Utherm Roof B Tapered	Flat and low sloped roofs
Utherm RooF L Utherm Roof L Tapered	Flat and low sloped roofs
Utherm Roof LE Utherm Roof LE Tapered	Flat and low sloped roofs
Utherm Roof LE Pro Utherm Roof LE Pro Tapered	Flat and low sloped roofs

The solutions with Unilin Utherm insulation boards on load-bearing steel plates or concrete slabs as shown in Fig. 2-11 can be used if the load-bearing structure has documented fire resistance (R).

Unilin Utherm insulation boards can be used as insulation over load-bearing structures made of wood-based materials (including solid wood elements) in compact roofs and terraces, see Fig. 12, provided that the load-bearing structure has documented fire resistance (REI).

When used on terraces, or on roofs where there is a risk of spreading between fire compartments, for example at less than 8 meters between buildings or buildings with roofs or terraces at different levels, fire safety must be documented separately by the responsible company in each construction project. Except for terraces for small houses and utility units with one fire cell without risk of spread to or from other fire cells.

In applications other than those given above, fire safety must be documented by analytical fire engineering design.

4. Properties

The product characteristics of Unilin Utherm insulation boards are shown in Table 2.

Reaction to fire
Unilin Utherm insulation boards have fire safety class E and F according to EN 13501-1, see Table 3

Fire resistance
Fig. 2-12 shows the principles for how the Unilin Utherm insulation can be used. Fire resistance of the structures has not been assessed by SINTEF and is not covered by the approval.

Spread of fire
Results from fire tests show that there is little risk of rapid-fire development due to the Unilin Utherm insulation, and it is small risk of an unacceptable rapid fire spread horizontally and vertically in the insulation. Several fire tests and assessments have been performed.

5. Environmental conditions

Chemicals hazardous to health and the environment
Unilin Utherm insulation boards contain no priority pollutants or other relevant substances in an amount considered hazardous to health and the environment. Priority hazardous substances include CMR, PBT and vPvB substances.

Indoor climate impact
Unilin Utherm insulation boards are judged not to emit particles, gases or radiation that have a negative impact on the indoor climate, or that have health significance.

Waste management/reuse possibilities.
Unilin Utherm insulation boards must be sorted as residual waste at disposal. The product is delivered to an approved waste disposal facility where energy can be recovered.

Environmental product declaration
An environmental declaration (EPD) has been worked out according to EN 15804 for Unilin Utherm isolation. For complete documentation see EPD no. 21-0009-004-00-00-EN, www.b-epd.be

6. Special conditions for use and installationn

Safety in case of fire
For all the solutions shown in Fig. 2-12, fire resistance and load-bearing capacity in the event of fire must be safeguarded as part of the design, including the necessary fire protection of the load-bearing steel plates (Fig. 2-5). The required fire resistance of building elements with load-bearing and/or fire cell limiting properties must be determined based on the applicable building regulations (TEK) with guidance, for each construction project.

The term Unilin Utherm includes the use of all product variants specified in Table 1

The approval applies to solutions with products mentioned in Tables 1 and 2 with a minimum thickness of 60 mm of the insulation layer.

Construction details
Construction details shall be carried out in accordance with the principles shown in Fig. 2-5 for substrates of profiled steel plates, in Fig. 6-10 for substrates of cast-in-place concrete and concrete elements, and in Fig. 11-12 for terraces. For use in apartment buildings with retracted terraces, it is assumed that a fire safety design is carried out with the aim of avoiding fire spread to neighbouring apartments.

For more details and more information, see SINTEF Building Research Design Guide 520.339 Bruk av brennbar isolasjon i bygninger.

Preconditions:

- Roofing covered by Unilin Utherm Roof must have fire safety class BROOF(t2) on Unilin Utherm roof insulation.
- Utherm roof can be laid as a single layer of minimum 60 mm thickness or as a multilayer with a minimum thickness of 120 mm except for locally in connection with gullies where the thickness must be minimum 60 mm. First layer and single layer must be laid perpendicular to the profiles of steel plates.
- Observations from fire tests have shown that the risk of horizontal fire spread in Unilin Utherm Roof is small. A slow and limited horizontal spread of fire should nevertheless be taken into account.
- On roof structures of profiled steel plates, concrete elements (hollow decks or DT elements) or cast-in-place concrete, Unilin Utherm Roof may be used without being covered on the underside with non-combustible insulation (A2-s1,d0). On such roofs, Unilin Utherm Roof can also be used without covering on the upper side with non-combustible insulation (A2-s1,d0) and without division of the roof surface into sub-areas of maximum 400 m2 with non-combustible insulation (A2-s1, d0). See examples shown in Fig. 2, 6 and 8. Covering on the upper or lower side, or division into sub-areas, is also not necessary when used on wood-based structures, see Fig. 12.
- Unilin Utherm Roof can be used against and around penetrations (including smoke hatches and overhead light domes) without any replacement to non-combustible insulation (A2-s1,d0). See Fig. 7.
- Transitions and penetrations must be carried out so as not to weaken the fire resistance of the structure or the protection of the insulation. Solutions with documented properties for the relevant application must be used. For execution of penetrations, see the SINTEF Building Research Design Guide 520.342 *Branntetting av gjennomføringer*.
- In cases where the roof structure of load-bearing steel plates has parapeted or adjacent walls/facades of or with combustible materials, a 0.6 m wide slab of at least 30 mm stone wool

insulation with a density of at least 150 kg/m3 must be placed under Unilin Utherm Roof against the wall. Parapet of or with combustible materials must be protected on the side facing the roof with a minimum of 30 mm stone wool insulation with a density of at least 110 kg/m3, mounted on a plywood sheet with a minimum thickness of 15 mm. See Fig. 4.

- In cases where roof structures made of concrete or concrete elements have parapet consisting of or with combustible materials, the side facing the roof must be protected with a minimum of 50 mm stone wool insulation with a density of at least 110 kg/m3, mounted on a plywood sheet with a minimum thickness of 15 mm. Here is a 0.6 m wide slab of minimum 30 mm stone wool insulation with a density of at least 150 kg/m3 under Unilin Utherm Roof against the wall not needed. In cases where adjacent walls/facades are made of or with combustible materials, the side against the roof must be protected with non-combustible façade cladding and two layers of 9 mm GU plasterboard or equivalent as undercladding / wind barrier on the wall. See Fig. 9.
- Gaps between concrete elements must be sealed with, for example, expanding concrete if they are wider than 50 mm. Narrower slits do not need to be sealed or covered.
- Over fire cell limiting walls, Unilin Utherm Roof insulation needs to be replaced with non-combustible insulation 0.6 m to each side for the wall, see Figs. 5a and b.
- On roofs with load-bearing profiled steel plates, the profiles on both the top and lower sides of the plate must be filled with non-combustible insulation (A2-s1,d0) over fire cell limiting walls. See Figs. 5a and 5b. If the steel plate profiles are perpendicular to the wall, the profiles on both sides of the steel plate must be filled with incombustible insulation 600 mm wide out from the wall on both sides to prevent leakage of smoke and fire gases.
- When a fire wall or sectioning wall has been passed through and at least 0.5 m up over the roof surface with load-bearing profiled steel plates, concrete or concrete elements, and the wall is made of, or covered with, non-combustible materials, Unilin Utherm Roof can be used as insulation on the roof. The insulation must not be replaced with non-combustible insulation (A2-s1,d0) along the wall. See Fig. 10.
- In roofs where other combustible insulation material is used (e.g. for partially renovated roofs), combustible insulation shall be separated from Unilin Utherm Roof with non-combustible insulation (A2-s1,d0) at a width of min. 0.6 m.

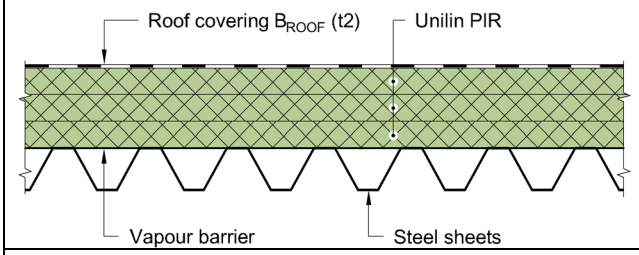

Fig. 2
Unilin Utherm insulation boards on roofs with load-bearing profiled steel plates
- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R).

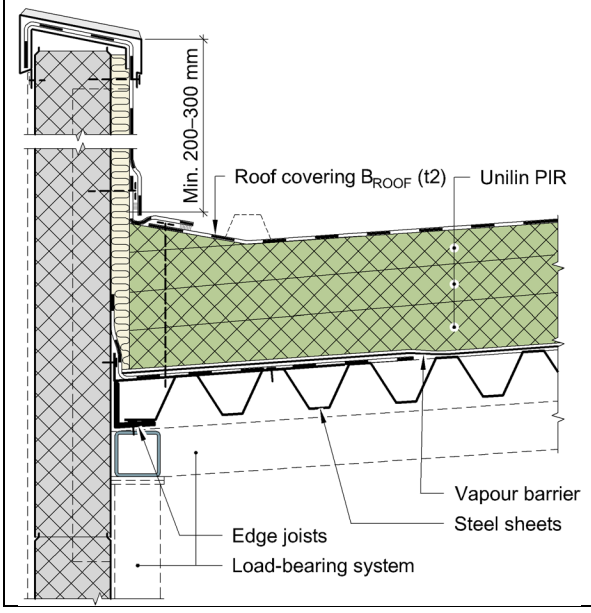

Fig. 3
Unilin Utherm insulation boards on roofs with load-bearing profiled steel plates against the wall or parapet of sandwich elements with stone wool cores (non-combustible materials) or PIR elements documented for the application (e.g. FM-Global 4880).
- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- No requirement for replacement to non-combustible insulation in the face of non-combustible wall and parapet.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R).

NB! The vertically mounted mineral wool sheet should be able to record the temperature movements of the sandwich elements to avoid open slits and cold bridges.
See more details about the detail between a space-built steel plate roof and the exterior wall of sandwich elements in TPF Informs No. 12 on www.tpf-info.org

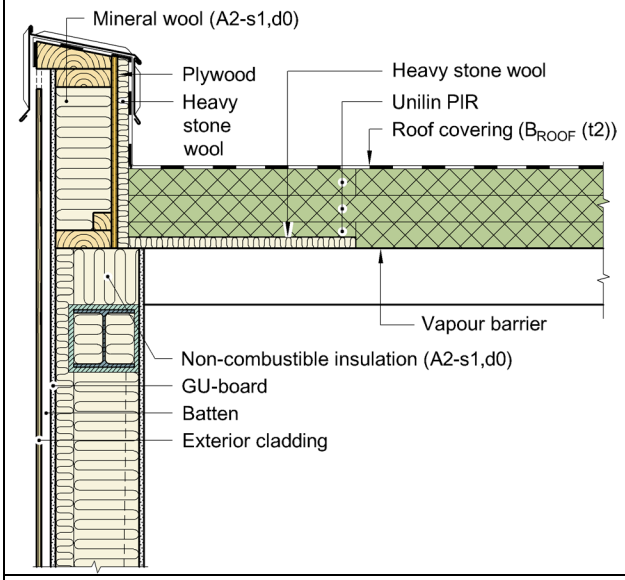

Fig. 4
Roof construction of load-bearing profiled steel plates insulated with Unilin Utherm insulation, against adjacent parapet or wall/façade of or with combustible materials such as wood.

- Unilin Utherm insulation boards must be protected on the underside against the wall with a 0.6 m wide slab of at least 30 mm stone wool insulation with a density of at least 150 kg/m^3.
- No requirement for covering on the upper side.
- No requirement for subdivision into sub-areas of max. 400 m^2
- Paraped by or with combustible materials, the side facing the roof must be protected with a minimum of 50 mm stone wool insulation with a density of at least 110 kg/m^3, mounted on a plywood sheet with a minimum thickness of 15 mm.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R).

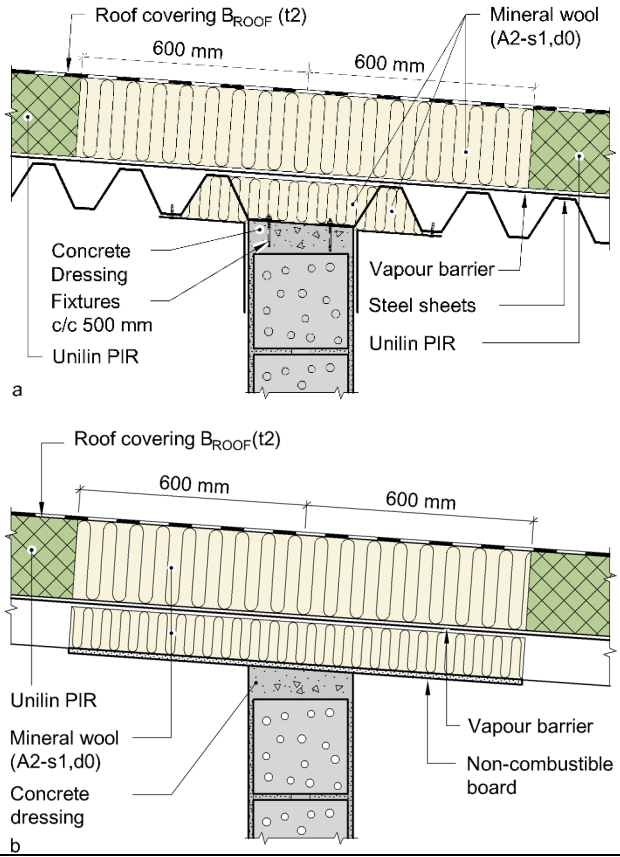

Fig. 5a and 5b
Fire cell limiting wall terminated under roof with load-bearing profiled steel plates insulated with Unilin Utherm insulation boards.

- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- The slab ceiling must be broken over the wall, i.e. slabs should not be continuously passed over the scheme.
- The profiles on both the top and bottom sides of the plate must be filled with non-combustible insulation (A2, s1,d0).
- If the steel plate profiles are perpendicular to the wall, non-combustible insulation must be mounted 600 mm wide out from the wall on both sides of the profiles to prevent leakage of smoke and fire gases.
- The insulation does not need to be replaced with non-combustible insulation above the wall.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R).

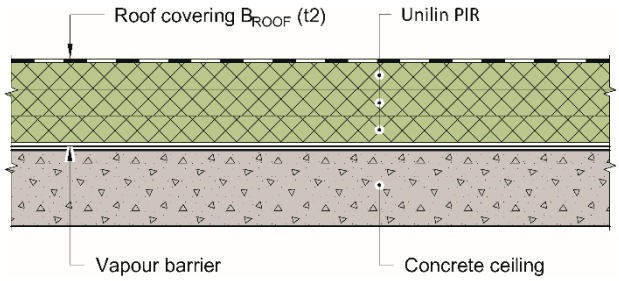

Fig. 6
Unilin Utherm insulation boards on concrete element slab or concrete slab.

- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- No requirement for special sealing of any joints ≤ 50 mm.
- The structure can be used in fire classes 1, 2 and 3 provided that the roof structure has documented fire resistance (R).

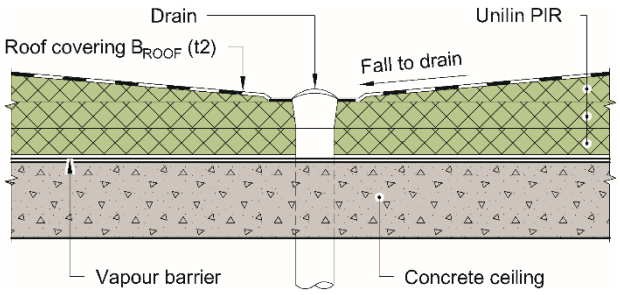

Fig. 7
Unilin Utherm insulation boards on concrete element slab or concrete slab with implementation.

- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- No requirement for special sealing of any joints ≤ 50 mm.
- No requirement for replacement to non-combustible insulation around drains or penetrations.
- The structure can be used in fire classes 1, 2 and 3 provided that the roof structure has documented fire resistance (R).

Transitions and penetrations must be carried out so as not to weaken the fire resistance of the structure or the protection of the insulation. Solutions with documented properties for the relevant application must be used.

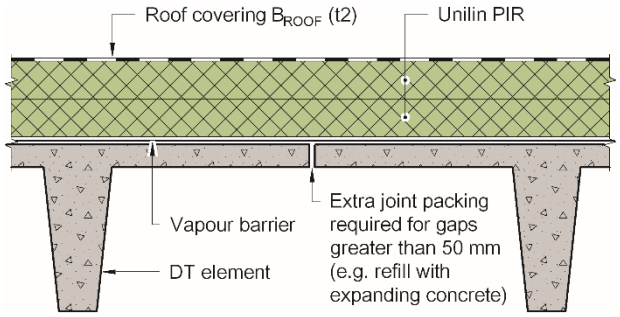

Fig. 8
Unilin Utherm insulation boards on concrete element deck with small open joints.

- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of insulation into sub-areas of maximum 400 m^2.
- No requirement for special sealing of joints ≤ 50 mm
- The structure can be used in fire classes 1, 2 and 3 provided that the roof structure has documented fire resistance (R)

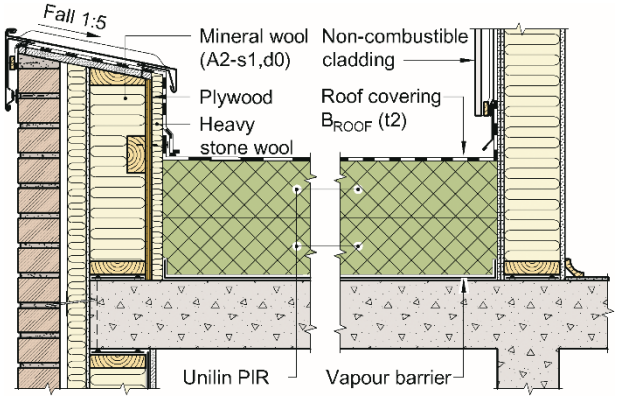

Fig. 9
Unilin Utherm insulation boards on concrete element slabs or concrete slabs against adjacent parapets or walls/façades of or with combustible materials

- No requirement to protect Unilin Utherm insulation boards on the underside against the wall with a 0.6 m wide slab of minimum 30 mm stone wool insulation with a density of at least 150 kg/m^3.
- No requirement for covering on the upper side
- No requirement for subdivision into sub-areas of max. 400 m^2
- Paraped by or with combustible materials, the side facing the roof must be protected with a minimum of 50 mm stone wool insulation with a density of at least 110 kg/m^3, mounted on a plywood sheet with a minimum thickness of 15 mm.
- Walls made of or with combustible materials must be protected on the side facing the roof with non-combustible façade cladding and two layers of 9 mm GU plasterboard or equivalent as undercladding / wind barrier on the wall.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R).
- If the construction is made of concrete and passed continuously past the wall as shown in the figure to the right, the solution can also be used in fire class 3. It is assumed that an analytical fire engineering design of the entire structure is carried out.

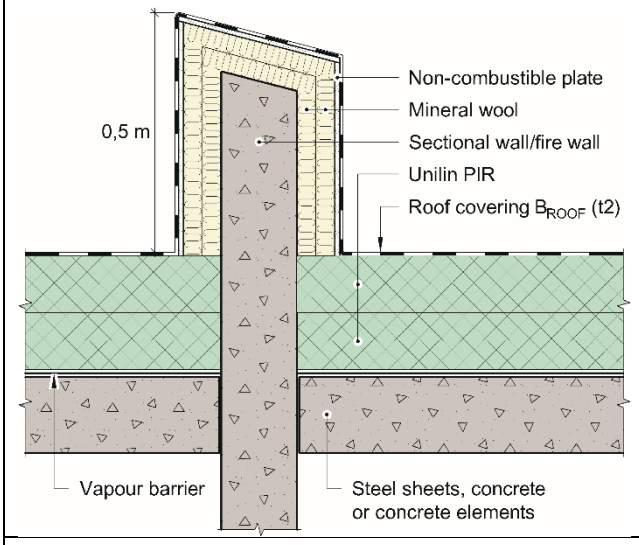

Fig. 10
Unilin Utherm insulation boards on cover of concrete deck, and sectional wall or firewall carried at least 500 mm up over roof. Walls executed or covered with non-combustible materials.

- No requirement to cover the insulation on the upper or lower side.
- No requirement for division of the insulation into sub-areas of maximum 400 m².
- No requirement for replacement to non-combustible insulation in 600 mm width along the wall.
- The structure can be used in fire classes 1, 2 and 3 provided that the roof structure has documented fire resistance (R).

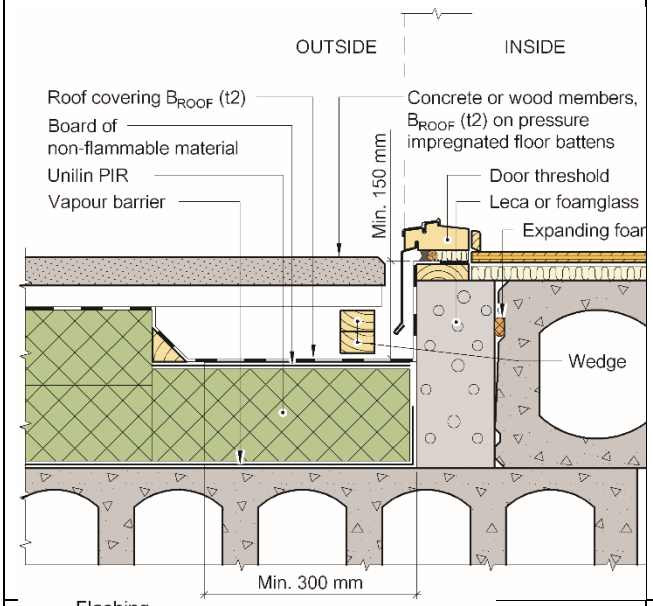

Fig. 11
Roof terrace of load-bearing concrete cover elements insulated with Unilin Utherm, against adjacent wall of or with combustible materials and with terrace door.

- No requirement for covering the insulation on the upper or lower side
- No requirement for subdivision into sub-areas of max. 400 m².
- Alternatively to protect the parapet and wall, the insulation can be replaced with non-combustible insulation in width 600 mm along the wall/parapet.
- Regarding the parapet and wall, see Fig. 9.
- The structure can be used in fire classes 1, 2 and 3 provided that the roof structure has documented fire resistance (R).

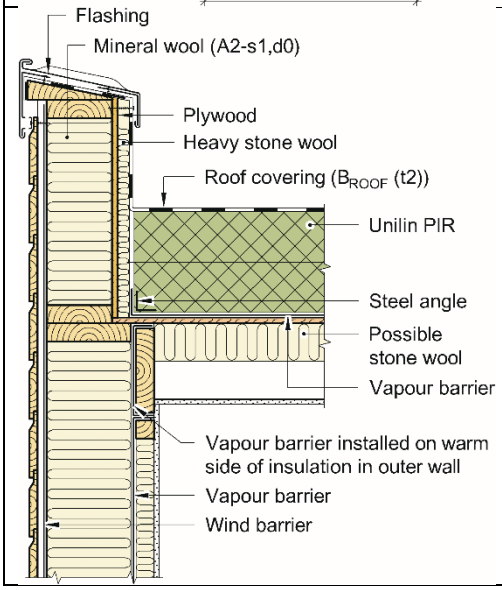

Figure 12
Roof and terrace of wooden beams or CLT with roof insulated with Unilin Utherm insulation boards, against adjacent parapet or wall/façade of or with combustible materials

- No requirement for covering on the top or bottom side.
- No requirement to protect Unilin Utherm insulation boards on the underside next to the wall/parapet with a 0.6 m wide slab of minimum 30 mm stone wool insulation with a density of at least 150 kg/m³.
- No requirement for subdivision into sub-areas of max. 400 m²
- Parapet/façade of or with combustible materials must be protected on the side facing the roof with a minimum of 50 mm stone wool insulation with a density of at least 110 kg/m³, mounted on a plywood sheet with a minimum thickness of 15 mm.
- The structure can be used in fire classes 1 and 2 provided that the roof structure has documented fire resistance (R) and the load-bearing structure has fire resistance EI for fire stress from underneath. Fire resistance EI must be at least as good as the fire resistance R of the load-bearing structure.

Installation

The insulation boards are cut and mounted to avoid cavities in the insulation layer.

The insulation boards have to be laid out in a shifted pattern.

Vapour barrier must be installed as shown in Fig. 2-12. See the SINTEF Building Research Design Guide 525.207 *Kompakte tak* for other details on the installation of, among other things, vapour barriers.

Installation should follow current installation instructions.

Transportation and storage
Unilin Utherm insulation boards should be stored and transported protected from moisture, open flame and direct sunlight.

7. Product and production control

All Unilin Utherm insulation boards are manufactured by:
Unilin BV – division Insulation,
Rue Zénobe Gramme 2
7181 Feluy,
Belgium

Unilin Utherm Roof L are also produced by:
Unilin BV – division Insulation
Waregemstraat 112
8792 Waregem (Desselgem),
Belgium

The holder of the approval is responsible for production control to ensure that Unilin Utherm insulation boards are manufactured according to the conditions established for the approval.

The factory manufacture of Unilin Utherm R insulation boards is subject to supervisory product and production control in accordance with the SINTEF Technical Approval contract.

The manufacturer's quality management system is certified in accordance with EN ISO 9001 by SGS Belguim, certificate no. BE15/223575910 for factory in Feluy

8. Basis for approval

Unilin Utherm insulation boards are assessed on the basis of reports that are the property of the holder.

Use of Unilin Utherm PIR insulation boards as described in this approval, deviates from pre accepted solutions given in regulations on technical requirements for building works (TEK17) and "*TPF informerer nr 6*" with regards to covering flammable insulation. The approval is issued on basis of fire testing and assessment of results given in report 2024:00299 dated 27.05.2024 by SINTEF.

9. Labelling

Unilin Utherm insulation boards are marked with the product name, article number, a code for the production site and the date of manufacture. The name of the manufacturer is printed on the packaging.

The product is CE marked in accordance with EN 13165. It can also be marked with the seal of approval for SINTEF Technical Approval; TG 20844.

10. Responsibility

The proprietor/manufacturer has the independent product liability in accordance with applicable law. Claims may not be submitted to SINTEF beyond those mentioned in NS 8402.

for SINTEF

Hans Boye Skogstad
Approval Manager